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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,284	07/17/2003	Arkady Pittel	11627-002002	2394

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EXAMINER

SHAPIRO, LEONID

ART UNIT	PAPER NUMBER
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2677

DATE MAILED: 12/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/623,284	PITTEL ET AL	
	Examiner	Art Unit	
	Leonid Shapiro	2677	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-112 is/are pending in the application.
- 4a) Of the above claim(s) 38-82, 87-100 and 103-112 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37, 83-86, 101 and 102 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-37, 83-86, 101-102 drawn to coordinate position inputting/detecting device, classified in class 345, subclass 156.
  - II. Claims 46-58, 94-97, 112 drawn to the stylus, light pen, classified in class 178, subclass 19.05.
  - III. Claims 27-41, 59-62, 69-71, 76-82 drawn to CMOS, CCD sensors, classified in class 356, subclass 3.13.
  - IV. Claims 63-67, 72-74, 104-111, drawn to the holders with clippers for writing instrument, classified in class 248, subclass 685.
2. Inventions of group 1-IV are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention of group I of has separate utility such as digitizers which does related to the holders with clippers by group IV. See MPEP § 806.05(d).
3. A telephone call was made to David Feigenbaum on November 14, 2005 to request an oral election to the above restriction requirement, which resulted in election group 1, without traverse.

***Claim Rejections - 35 USC § 112***

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-23, 27-37, 86, 101-102 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claims 1, 27 and claim 102 have limitations including word:

"subpixel".

It is not clear, what the "subpixel" means? Is it color or monochrome? How many "subpixels" in one pixel?

Claim 86 is not complete. It is not clear what is limitations of claim 86?

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-18, 22, 24, 27-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Ogawa (US Patent No. 6,100,538).

As to claim 1, Ogawa teaches a method (See Col. 1, Lines 7-22) comprising

conveying light from a moving light source on the writing instrument as an indication of the location (See Figs. 1, items 2, 24, Col. 8, Lines 14-18) and path of the writing instrument on a two dimensional writing surface (See Fig. 1, items 1-2, Col. 4, Lines 18-33),

sensing the light at two or more sensors and generating a sequence of signals representative of the sensed light (See Fig. 1, items 3L-3R, Col. 6, Lines 43-56), and

applying a technique to increase the stability of subpixel reading (See Fig. 1, items 3L-3R, from Col. 6, Line 65 to Col. 7, Line 3).

As to claims 2-3, 10, Ogawa teaches the technique is based on optics and the optics are configured to enhance the uniformity of signal response of the sensors. (See Figs. 1-2, items 3L-3R, from Col. 6, Line 65 to Col. 7, Line 3).

As to claims 4-5, 28-31, Ogawa teaches the lens comprises an aspheric and spherical lenses (See Fig. 2, item 9, from Col. 7, Line 62 to Col. 8, Line 1).

As to claims 6-7, 11, Ogawa teaches sensors comprise linear arrays of analog sensitive pixel elements (See Fig. 2, item 13, Col. 8, Lines 6-13).

As to claims 8-9, 32, Ogawa teaches the technique is based on algorithmic processing of the generated signals in which the algorithmic processing comprises mapping the signal response of the sensors based on parameters associated with the writing instrument (See Fig. 10, item S5 and Fig. 14, item S2).

As to claim 12, Ogawa teaches the technique is implemented in digital hardware (See Fig. 1, item 5, Col. 6, Lines 60-65).

As to claim 13, Ogawa teaches the technique is implemented in analog circuitry (See Fig. 19, item 21, Col. 14, Lines 37-44).

As to claim 14, Ogawa teaches the technique comprises an algorithmic technique that also reduces the effect of variations of the light intensity based on other than dimensional effects (See Fig. 8, item S5, Col. 10, Lines 32-35).

As to claim 15, Ogawa teaches the sensors comprise linear pixel-arrays (See Fig. 2, item 13, Col. 8, Lines 6-13), the signals are grouped in frames (in the reference is equivalent to CCD move and read) (See Fig. 10, item S4), and the signal processing technique comprises processing of multiple frames to cancel noise (See Fig. 8, item S5, Col. 10, Lines 32-35).

As to claim 16-18, 22, Ogawa teaches the light conveyed from the moving writing instrument is modulated at a frequency related to the rate at which the signals are generated by the sensors (See Fig. 19, items 24r, 24g, 24b, Col. 15, Lines 12-52).

As to claim 24, Ogawa teaches a method (See Col. 1, Lines 7-22) comprising conveying light from a moving light source on the writing instrument in a time-changing pattern of directions (See Figs. 1, items 2, 24, Col. 8, Lines 14-18) and path of the writing instrument on a two dimensional writing surface (See Fig. 1, items 1-2, Col. 4, Lines 18-33);

sensing the light at two or more sensors located at two different locations spaced from the writing instrument (See Fig. 1, items 3L-3R, Col. 6, Lines 43-56), and

determining the location of the writing instrument by detecting a phase difference between signals measured at the two sensors (See Fig. 8, item S5, Col. 10, Line 21- 58).

As to claim 27, Ogawa teaches apparatus (See Col. 1, Lines 7-22) comprising sensors to receive light (See Fig. 1, items 3L-3R, Col. 6, Lines 43-56) from a writing instrument (See Figs. 1, items 2, 24, Col. 8, Lines 14-18) moving across an X-Y writing surface, and featuring instability in subpixel reading (See Fig. 1, items 1-2, Col. 4, Lines 18-33),

optics configured to enhance optical power of the light received from the writing instrument (See Figs. 1-2, items 3L-3R, from Col. 6, Line 65 to Col. 7, Line 3).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa as applied to claim 1 above, and further in view of Leduc et al. (Fr. Patent No. 84 08852).

Ogawa does not disclose the frame rate is varied.

Leduc et al. teaches the frame rate is varied (See Figs. 1,3, Title).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Leduc et al. teaching into Ogawa system to increase noise immunity.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa as applied to claim 1 above, and further in view of Hong (US Patent No. 5,227,732).

Ogawa does not disclose the chopped signals are integrated over time.

Hong teaches the chopped signals are integrated over time (See Fig. 3, item 12, from Col. 2, Line 66 to Col. 3, Line 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Hong teaching into Ogawa system to reduce noise include in the luminance signal (See Col. 1, Lines 5-11 in the Hong reference).

7. Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa as applied to claim 24 above, and further in view of Iwamatsu (US Patent No. 5,661,761).

Ogawa does not disclose the time-changing pattern of directions includes a rotating pattern with respect to an X-Y plane on which the writing instrument is moving and signal radiated in the positive X direction is in phase quadrature to the signal radiated in the Y direction.



Iwamatsu teaches the time-changing pattern of directions includes a rotating pattern with respect to an X-Y plane on which the writing instrument is moving and signal radiated in the positive X direction is in phase quadrature to the signal radiated in the Y direction (Col. 6, Line 12-28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Iwamatsu teaching into Ogawa system to reduce error in the phase difference (See Col. 5, Lines 55-63 in the Iwamatsu reference).

8. Claims 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Stork et al. (US Patent No. 6,181,329 B1).

As to claim 83, Ogawa teaches a method comprising positioning a writing instrument at a succession of positions on a writing surface (See Fig. 1, items 1-2, Col. 4, Lines 18-33),

generating signals representative at sensors from light received from writing instruments at the succession of position (See Fig. 1, items 3L-3R, Col. 6, Lines 43-56).

Ogawa does not disclose determining calibration parameters for the writing instrument for use in calibrating a process that determines the positions of the writing instrument as it is being moved.

Stork et al. teaches determining calibration parameters for the writing instrument for use in calibrating a process that determines the positions of the writing instrument as it is being moved (See from Col. 5, Line 54 to Col. 6, Line 9).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Stork et al. teaching into Ogawa system in order to use the writing instrument in many different environments (See Col. 1, Lines 31-36 in the Stork et al. reference).

As to claim 84, Stork et al. teaches the calibration parameters comprise coefficients used in polynomial series that are part of the position determining process (See Col. 5, Lines 54-66).

9. Claim 85 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa and Stork et al. as applied to claim 83 above, and further in view of Kitai et al. (US Patent No. 6,501,061 B1).

Ogawa and Stork et al. do not disclose positions do not lie on a regular rectangular grid.

Kitai et al. teaches positions do not lie on a regular rectangular grid (See Fig. 4A, item 100, Col. 6, Lines 9-21).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Kitai et al. teaching into Ogawa and Stork et al. system to improve calibration methods (See Col. 1, Lines 43-44 in the Kitai et al. reference).

10. Claim 101 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Behrends (US Patent No. 5,572,607).

As best understood by examiner, Ogawa teaches a method comprising receiving light from a moving writing instrument (See Fig. 1, item 2) at a light sensor having an array of sensitive pixel elements (See Fig. 1, items 3L-3R, Col. 6, Lines 43-56 and Col. 7, Lines 44-48).

Ogawa does not disclose determining the location in the array at which the maximum intensity of light has been received from the writing instrument, the location being determined with sub-pixel accuracy.

Behrends teaches determining the location in the array at which the maximum intensity of light has been received from the writing instrument (See Fig. 7, item 1k, Col. 7, Lines 44-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate Behrends teaching into Ogawa system to improve correction of intensity (See Col. 2, Lines 38-44 in the Behrends reference).

### ***Telephone Inquire***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 571-272-7683. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on 571-272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LS

11.18.05

AMR A. AWAD  
PRIMARY EXAMINER  
